



## Patent Value Tool

IBM Confidential

Title: Patterned SOI by Oxygen Implantation

Inventor:

Inventor:

Inventor:

Inventor:

Disclosure number:

Total Patent Value Tool score: 50

Key idea of invention:

An SOI wafer and integrated circuit chip with variable thickness Si according to a mask pattern. An SOI wafer and integrated circuit chip having SOI islands surrounded by bulk Si according to a mask pattern. An SOI wafer and integrated circuit chip with a silicon island bounded on all sides by oxide formed by ion implantation. An SOI wafer and integrated circuit chip with a trench having horizontal and vertical buried oxide with respect to the wafer surface and trench sidewall surfaces. An SOI wafer and integrated circuit with a silicon island or SOI island containing an FET and a decoupling capacitor in a trench in bulk silicon close by and further a substrate contact to the bulk silicon surface. A body tie contact to control floating body effects in SOI islands via the bulk silicon close by.

1. What is the anticipated annual market size (in dollars) that will be captured by your invention? >\$5B

Market explanation:

SOI is an alternative to bulk Si for IC manufacturing. Bulk Si is about \$150B. A 30% penetration would be reasonable.

2. How new is the technical field? Emerging

Newness explanation:

3. How central is the invention to the product(s) which might be expected to contain the invention? Essential

Centrality explanation:

4. What is the scope of the claim? Moderate

Scope explanation:

5. What are the portfolio needs in the area of your invention? PPM Needs

Portfolio needs explanation:

Matches PPM Need for 1. (CMOS Technology) Low power/high speed logic, low noise /low power high

6. How easily can the use of the invention by a competitor be detected? With Work

Detectability explanation:

7. How easily can use of the invention be avoided by a competitor? With Much Work

Avoidance explanation:

8. What percentage of the companies producing products in the field of this invention might use this invention?  
Broadly Cloned

Likelihood of cloning:

9. What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?  
High value

Status of alliance:

10. What is the value of this patent to current or anticipated Technology Transfer Activity (between IBM and other companies)? Some value

Status of technology transfer to non-IBM partner:

11. Does it result in prestige to IBM? Industry-Wide

Prestige to IBM:

DISPOSITION: File

### Standard Questions

1. Please indicate if any or all of the following apply to this invention:

Was it conceived or first actually reduced to practice under the Consortium for Superconducting Electronics? No

Was it, in any way, started or developed under a government contract or project? No

Do you consider that the material contained in this disclosure should be classified in the interest of National Security? No

Do you have a present intention to publish this subject matter? No

1. What types of companies do you expect to compete with inventions of this type? Check all that apply.

Manufacturers of mainframe computers

Manufacturers of midsize computers

Manufacturers of workstations

Manufacturers of PCs

Non-Computer manufacturers

Other (Specify)

Semiconductor manufacturers and IC foundries of low power CMOS chips

2. Please list any specific companies that you think may be interested in this patent.

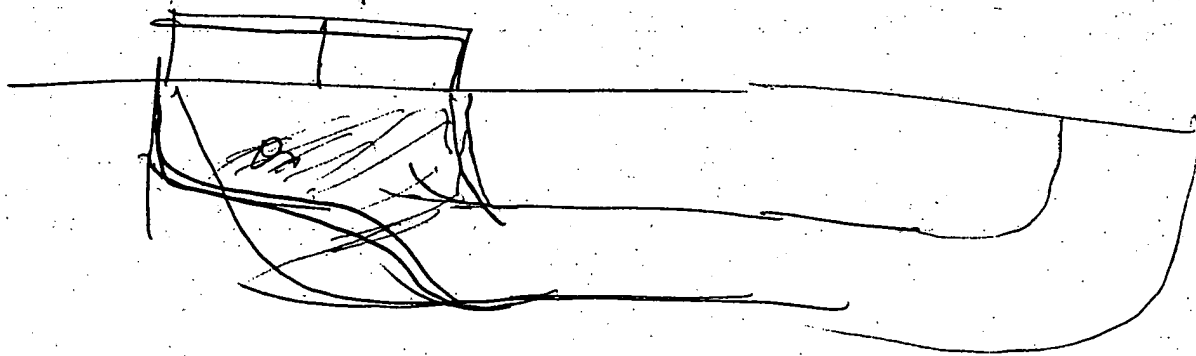
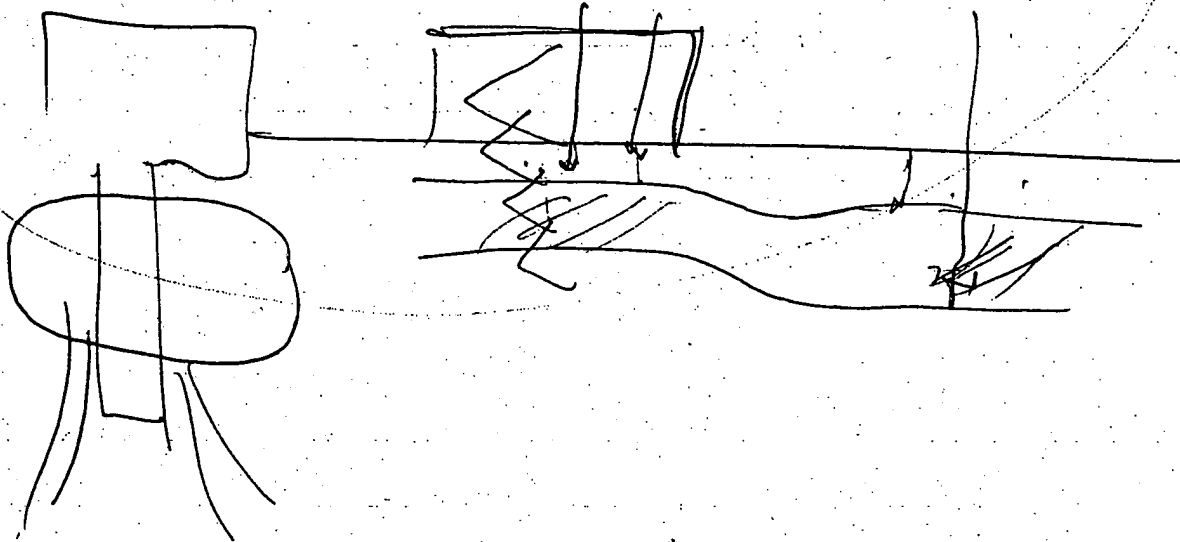
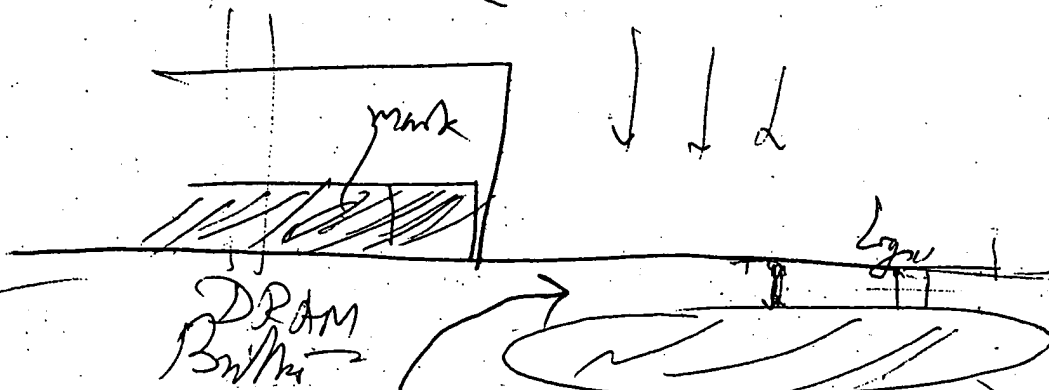
Intel, NEC, AMD, Fujitsu, DEC, Samsung, HP, Motorola, etc.

**Inventors' signatures:**

**Signature of Business Developer/Tec/Strategist:**

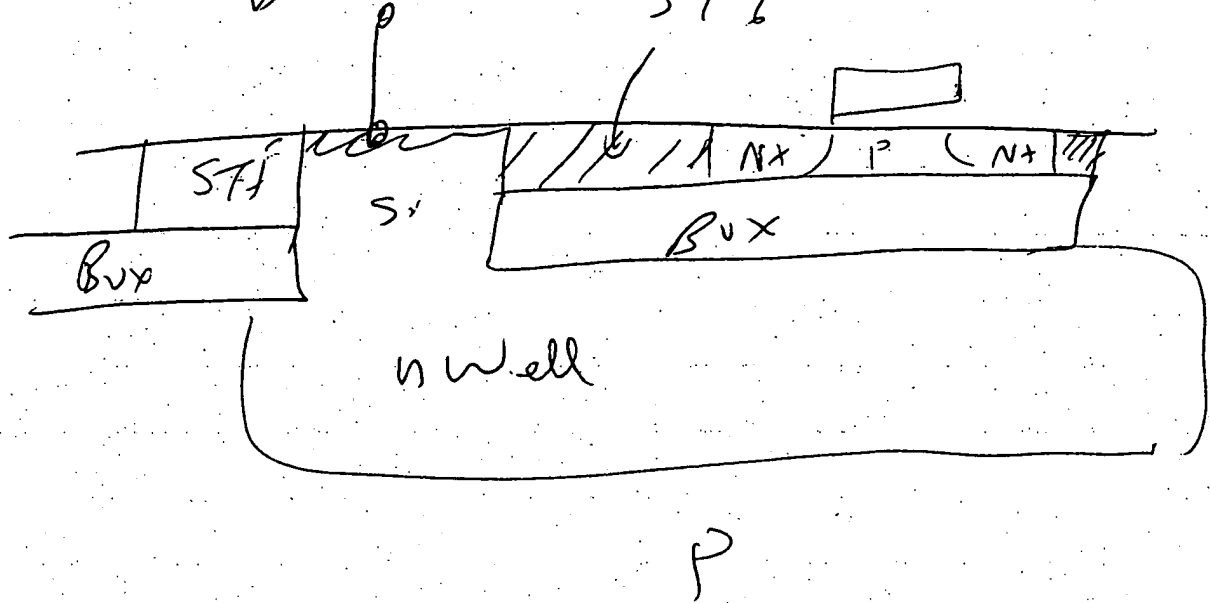
**Date** \_\_\_\_\_

# Pattern SDI



# Patterned SDI

Contact to substrate NW to  
be used for decoupling C  
STI



Pattern SPZ

